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Abstract

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Understanding Health Professionals' Informal Learning in Online Social Networks: A Cross-Sectional Survey

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Abstract. Online social networks (OSNs) enable health professionals to learn informally, for example by sharing medical knowledge, or discussing practice management challenges and clinical issues. Understanding how learning occurs in OSNs is necessary to better support this type of learning. Through a cross-sectional survey, this study found that learning interaction in OSNs is low in general, with a small number of active users. Some health professionals actively used OSNs to support their practice, including sharing practical and experiential knowledge, benchmarking themselves, and to keep up-to-date on policy, advanced information and news in the field. These health professionals had an overall positive learning experience in OSNs.

Keywords. Networked learning, health professional education, online social networks, continuing professional development

Introduction

As medical knowledge expands and health care delivery becomes more complex, health professionals must commit to continuous learning to maintain up-to-date knowledge and skills. One approach to meeting their learning and development needs is through peer knowledge sharing in Online Social Networks (OSNs). OSNs have been found useful to reduce professional isolation and support anytime-anywhere peer-to-peer interaction at scale. They are also thought to contribute to improving Continuing Professional Development (CPD) [1].

There are many OSNs targeted towards health professionals but the interaction occurring in those OSNs is generally low, and they apparently fail to support the broader learning objectives of the participants. For example, not being able to test proposed solutions in actual practice through critical reflection in OSNs, and discuss the learning topics that are relevant to the complexity of professional practice [2]. It has been recognised that there is a lack of understanding about how learning occurs in OSNs, making it difficult to design and facilitate this type of learning. Thus, research analysing and understanding the process of learning in OSNs is needed in order to realise the full potential of OSNs for health professionals' CPD [2].

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In this study, we aim to understand how learning occurs in OSNs for health professionals by surveying them about the interactions, topics of interest, and contexts of learning within the OSNs that they use for informal learning.

1. Background and Related Work

Most relevant learning for the development of professional knowledge and expertise among health professionals is informal and this has been considered as particularly important for health CPD [3]. This study follows Eraut [4], who defines informal learning as “learning that comes closer to the informal end than the formal end of a continuum. Characteristics of the informal end of the continuum of formality include implicit, unintended, opportunistic and unstructured learning and the absence of a teacher”. This is the kind of learning in which the individual often has little awareness of having learned something, since the learning may not be immediately translated into their practice but is likely to be stored and applied when the appropriate opportunity arises in the future.

OSNs could complement (or even replace) traditional CPD, as an informal learning channel [5]. However, only a few studies have investigated health professionals' learning in OSNs to understand the impact of this learning on practice. Ikioda and Kendall [6] analysed the interaction in an online community for UK health visitors, finding that an online community was likely to have a mixture of lurkers, observers, passive and active contributors. In addition, they considered that the interaction of an online community may be influenced by network size, location, and topic relevance. Stewart and Abidi [7] studied the patterns of interaction that emerged within a paediatric pain discussion forum to understand the flow of experiential knowledge sharing among health professionals.

To get a complete picture of the learning process, Li et al. [8-10] have carried out a series of studies that employ various analytics methods to investigate different dimensions of the learning process (including learning interaction, learning content, and learning context) in OSNs for health professionals. However, their studies did not directly survey health professionals to understand their learning in OSNs. In this study, we therefore use a survey to gain further insight into the learning process within OSNs, as characterised directly by users of these OSNs.

2. Methods

Online Questionnaire. A questionnaire was designed based on findings about the learning process as described in previous learning analytics studies [8-10]. It consisted of 30 items measuring learning interaction, learning topic and learning context. It was in two parts. The first part had items relating to learning context including demographics, work and educational background. The second part had items relating to learning interaction and learning topic; as well, it had additional questions relating to learning context, that were aimed to collect environmental context data including opportunities to apply learning, social relations, and recognition of learning. It was expected that knowing this additional context information would help to interpret these respondents' learning experience, and so enhance understanding of the learning process in OSNs.

Data Collection. The target for this survey was any health professionals who used OSNs for informal learning. The participants were recruited via an Australian-based online health CPD provider's mailing distribution list. The mailing list includes 3,233 registered medical practitioners who joined in this community to take part in online courses and webinars for their CPD.

Following Human Research Ethics approval, the survey took place in late 2016 and early 2017. Data were collected using REDCap software (<https://www.project-redcap.org>). An invitation to the study with a link to an online questionnaire was emailed to recruit participants. The survey was open for completion for a total of four weeks. No incentive for completion was offered, and no reminder email was sent.

Data Analysis. Data were exported from REDCap via its automated export procedure to 'MS Excel', and were analysed using standard descriptive statistics to show trends in the data. Positive (i.e. 'agree' and 'strongly agree') and negative (i.e. 'disagree' and 'strongly disagree') responses were combined for the purpose of the analysis.

3. Results

Of the 3,233 health professionals who received the invitation email, 254 logged on to the survey and 191 completed it, yielding a response rate of 6%. The database was subsequently cleaned of 29 records missing critical answers (i.e. those not answering questions relating to interaction, topics, or learning experience). In addition, 13 records were removed from respondents who only accessed formal online learning (e.g. doing formal CPD activity in a Learning Management System). The final sample consisted of 149 valid responses. The following sections describe the sample characteristics, types of OSNs used most often for informal learning, and the interactions, topics, and experiences of these respondents in these OSNs.

3.1. Sample Characteristics

Of the 149 respondents, gender was evenly split. Most respondents (63%) were aged between 35 and 54 years. 86% of them were drawn from the most populated Australian States (i.e. Queensland, New South Wales, and Victoria), and identified as working in a non-rural setting. In terms of their educational background, 62% of them graduated in Australia, and 66% were Fellows of the Royal Australian College of General Practitioners (RACGP). GPs accounted for 95% of respondents and the remainder were specialists. Most (68%) had 10 to 19 years' work experience in General Practice; 11% were the principal GP and/or owner of a practice. 64% worked full-time, 31% worked part-time, and the remainder were in training. We also identified 24% of the respondents as having 'portfolio careers', that is, multiple professional roles. For example, they were also doing remote locums, working as a medical officer at one or more hospitals, teaching or lecturing at a university, or working in a local Emergency Department.

3.2. Types of OSNs Used for Informal Learning

Figure 1 presents the types of OSNs that were used most often by the respondents for informal learning. As shown, the OSN that was most often named was GPDU, a private Facebook group that operates as an online community for all GPs working in Australia and New Zealand, followed by LinkedIn, ShareGP, and Twitter. Other OSNs included Figure1, Medcast, UpToDate, and AMA forum.

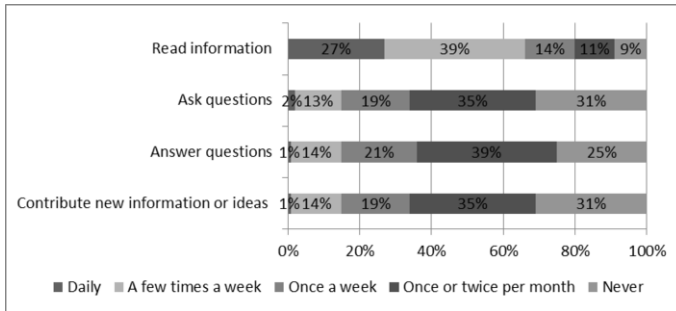


Figure 1. The frequency of interaction in OSN.

Facebook, LinkedIn and Twitter are widely known OSNs, and cater to a wide array of professions and markets including healthcare. These OSNs offer ease of access compared to online communities dedicated to health professionals, which may be the reason why they were frequently used. ShareGP is a private GP community exclusive to RACGP members. The large RACGP membership among participants explains the popularity of ShareGP in the survey results.

Most (60%) participants used OSNs to seek information, 14% engaged in case discussions, 11% were preparing for exams, and the remainder were benchmarking their practices or building connections. When the respondents were asked if the OSN was moderated, 66% indicated that the OSN was moderated, 16% believed that the OSN was not moderated, and 18% were unsure if the OSN was moderated.

3.3. Learning Interaction

Based on the respondents' self-reported results, we found an overall low level of interaction, with a small number of active users in OSNs. In this study, an active user was defined as a user who participated in OSNs daily or a few times a week. As shown in Figure 2, although all users read information, most users (approx. 65%) never participated or rarely did so (once or twice a month). Only a small number of respondents (15%) reported themselves as active users in OSNs. 22% of respondents were identified as passive users, based on the fact that their only response to the four interaction items was that they read information in the OSNs. However, it is possible that most of the respondents were active participants in OSNs in other ways not asked about.

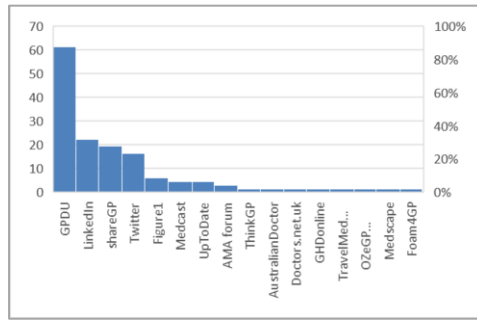


Figure 2. Types of OSN used for informal learning.

The patterns of interaction among those who ‘ask questions’, ‘answer questions’, and ‘contribute new information’ were similar. Examining the individual responses, we found that: 1) those who ask questions tend to answer questions and contribute new information; 2) those who do not ask questions do answer questions; 3) who do not answer questions or contribute new information generally do not ask questions. In addition, most of these participants (72%) interacted with only a small number of people (< 10) in OSNs, and they generally interacted with people whom they had met in OSNs.

There was no consistent difference in their interaction over time. 32% reported having increased interaction over time, 36% reported having decreased interaction and 32% believed their interaction neither increased nor decreased over time.

In terms of their regular time and location in accessing OSNs for informal learning, 36% of the respondents were active in the evening, whereas 48% had no fixed time. Home access accounted for 85% of the population, while others were mobile or accessing from a workplace.

3.4. Learning Topics

The respondents considered many topics in OSNs were important to their informal learning, including both clinical and non-clinical topics. The clinical topics were quite diverse; 39 specialised topics were identified, with 80% indicated by only one or two respondents. 9 topics appeared more often than others, including: dermatology (n=24, 16.1%), mental health (n=14, 9.4%), diabetes (n=12, 8.1%), chronic disease management (n=10, 6.7%), women's health (n=9, 6%), addiction medicine (n=8, 5.4%), cardiology (n=9, 6%), emergency medicine (n=8, 5.4%), and pain management (n=8, 5.4%).

Compared to clinical topics, non-clinical topics were more focused; 12 non-clinical topics were identified including: leisure (n=17, 11.4%), policy (n=16, 10.7%), education and training (n=15, 10.1%), patient communication (n=15, 10.1%), news (n=12, 8.1%), work experience (n=12, 8.1%), political issues (n=11, 7.4%), social media use (n=11, 7.4%), workload management (n=12, 8.1%), peer support (n=10, 6.7%), family (n=8, 5.4%), and running a practice (n=8, 5.4%).

Slightly more respondents believed that clinical topics were more frequently discussed than non-clinical topics in OSNs, which may indicate that OSNs have been increasingly used for professional use rather than leisure or social discussions.

3.5. Learning Experience

The respondents' learning experience in OSNs was positive overall. As shown in Figure 3, most respondents (approx. 70%) agreed that they could easily participate in any discussion and share knowledge in OSNs, although approximately 20% disagreed with this statement. By inspecting their individual responses, we found those 20% were passive users and inactive users (who never asked or answered any question nor contributed new information, or who did so only once or twice a month).

65% of respondents (27% of whom were passive users) believed that OSNs provided valuable information for their learning and contributed to solving challenges in their practice. This may indicate that OSNs were useful for their informal learning – they could search and obtain just-in-time information in OSNs and then apply it in practice to solve challenges. However, overall approximately 25% gave a neutral response, indicating those may not have found OSNs beneficial to their learning.

Regarding their attitudes on accrediting the interaction in OSNs towards CPD points, 64% of respondents agreed with this approach, indicating that providing CPD credits for OSNs use may lead to its increased acceptance [11]. However, 19% were not sure, and 17% disagreed. They were keen to “keep informal learning informal”.

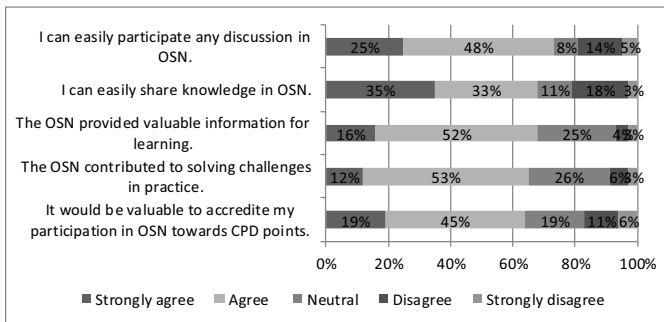


Figure 3. The learning experience in OSN.

4. Conclusions

OSNs have potential as an innovative approach to informal learning for professional development of health professionals. However, there is a lack of understanding about how health professionals learn in OSNs, making it difficult to design and facilitate this type of learning. This study surveyed a sample of health professionals in Australia to investigate their learning in OSNs including learning interactions, topics of interest and context of learning.

Our analysis shows that learning interaction in OSNs is low in general, with a small number of active users, and that they prefer to seek information in moderated OSNs. This finding is consistent with the prior studies [9, 12], which suggest that health professionals went online quite strategically and demonstrated self-directed learning behaviors. The topics of interest indicate that health professionals actively used OSNs to support their practice. Non-clinical topics of interest were similar, which include the topics relating to policies, latest news and advanced information in the field.

However, clinical topics of interest appear to vary across different OSNs, and include topics relating to their practices, sharing practical and experiential knowledge and providing benchmarks. The context of learning is markedly different in different OSNs (in particular learner characteristics). This suggests that learning context will always need to be given the greatest consideration by people who wish to understand and support learning interaction and learning content in these OSNs.

Using a survey for understanding the learning occurring in OSNs has its own limitations. One is the inability to identify the exact number of passive users from the target survey population. In addition, the findings were based on self-reported data which may not be a true representation of the learning process. Lastly, the findings may not generalise to health professionals in Australia as a whole because of the small sample size and single profession represented, and because of the unique context of each OSN. Future work to address these limitations may involve further validation of the findings reported here with other groups of health professionals.

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